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ABSTRACT

An experimental study compared the effectiveness of a traditional General Educational Development (GED) curriculum with a literacy curriculum based on applied literacy skills. An experimental group of 34 adult students received GED instruction emphasizing functional and workplace contexts and supplemental instruction, whereas the 35 students in the control group received instruction based on a traditional GED curriculum. Fourteen students from each group completed the training programs. No major differences between the experimental and control group members' test performance, retention, or success in meeting their stated goals were found. A second objective of the study was to determine the validity of the Educational Testing Service's Tests of Applied Literacy Skills (TALS) as a predictor of GED performance. A regression analysis of the students' pre-GED course scores on the TALS did not reveal any correlation between the students' performance in a GED program and their performance on the TALS. The study findings were concluded to be tentative at best given the small sample size and variable of two instructors. (Appended are data summaries and statistical analyses, an outline of the applied literacy curriculum, and student follow-up survey.) (MN)

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VERIFYING APPLIED LITERACY SKILLS (VALS)

in ABE Programs

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Joan K. Lipiec
Project Coordinator

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Catherine Campbell
Joseph Cortese
Jean Dyer
Project Instructors

Lauren Giguere
Director of Literacy and Job Training

Lehigh County Community College, City Site
609 Hamilton Mall
Allentown, PA 18101
(215) 776-1998

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ABSTRACT PAGE

Title: Verifying Applied Literacy Skills in ABE Programs (VALS)

Project No.: 98-3043 **Funding:** $17,650

Project Director: Joan K. Lipiec **Phone No.:** (215) 776-1998

Agency Address: Lehigh County Community College, 609 Hamilton Mall, Allentown, PA 18101

Description:

This project attempted to show, via an experimental and control group, that testing and a curriculum based on applied literacy skills would result in at least equivalent, if not better basic skills growth; would achieve a higher retention rate; and would be better directed toward adults' goals. The experimental group was to receive GED instruction with functional and workplace contexts emphasized as well as supplemental instruction. The control group was to receive a traditional GED curriculum.

Objectives:

1.0 To investigate the degree to which the ETS Tests of Applied Literacy Skills may be used in predicting GED success.

2.0 To obtain baseline data on applied skills which can be compared to state (VALS) and national (NALS) literacy scores.

3.0 To demonstrate greater learning gains and retention rates in the experimental when compared to a traditional GED program.

4.0 To determine the level of post-program student success in meeting goals.

Target Audience:

Adults in Lehigh County who lack a high school diploma and who are likely to be deficient in basic skills.

Product(s)--if applicable:

Final Report includes curriculum outlines and materials.

Method(s) of Evaluation:

-Regression analysis to determine correlation of ABLE and TALS tests
-T tests to compare experimental and control group performance on standardized tests
-Comparison of attendance data using means and percentages

Findings:

There were no major differences on experimental and control group performance, retention rates or success in meeting goals.

Conclusions:

Given the small sample size (N=71) and the variable of two different instructors, tentative conclusions are that the TALS cannot be used as a predictor of GED performance.

Descriptors: (To be completed only by AdvancE staff)

INTRODUCTION

The VALS project began with the assumption that real (personal and work) tasks are the most important areas for which adults must be prepared. It proposed to demonstrate that alternative curricula and testing procedures would equal or surpass traditional ABE/GED preparatory programs in student learning gains, retention rates, and in readiness for employment. The project also forecasted that results would provide more valid and reliable data to compare with state and national statistics.

Lehigh County Community College proposed a research design with an experimental and control group to test the viability of curricula and testing which focused on applied literacy skills, job readiness and employee skills, and computer literacy in preparing adults for life tasks.

Through its GED waiting list, the project recruited 71 adults for GED preparation. Based upon pretest data using the Tests of Applied Literacy Skills (TALS) and the ABLE test, the population was divided into two roughly equal subgroups. The control group was to be taught using a traditional ABE approach and materials. The experimental group would receive instruction as already described, using both GED materials and applied literacy texts. Students received a total of 100 hours of instruction over six months (two sessions per week of two hours each). Students in the control group learned from a single instructor. Students in

the experimental group had a primary instructor for basic skills and a counselor/instructor to conduct the career readiness portion of the curriculum. Also, a third instructor conducted two pre-instructional sessions on study skills for the target group. The GED practice test as well as post testing on the TALS and ABLE was given at class completion. During the last three months of the program, students had the opportunity to continue their study independently, using the program's GED books and software. In addition, student follow-up via telephone interview was conducted during this period. A coordinator managed all phases of the program as well as conducted student testing and the independent study lab.

Complete or additional copies of the report may be obtained from:

Advance or
Division of Adult Basic/Literacy Education Programs
Commonwealth of Pennsylvania
Department of Education
333 Market Street
Harrisburg, Pennsylvania 17126-0333

STATEMENT OF THE PROBLEM

In its 1986 *Literacy: Profiles of America's Young Adults*, the National Assessment of Educational Progress reported testing of approximately 3600 individuals with tasks designed to simulate what people encounter at work, home, and in the community. It concluded that: "adult literacy programs aimed at developing comprehension skills are frequently based on elementary school reading models that, for the most part, are restricted to the use of narrative texts. Results from this and other studies suggest that primary emphasis on a single aspect of literacy may not lead to the acquisition of the complex information processing skills and strategies needed to cope successfully with the broad array of tasks adults face."

Furthermore, the results of this study were sufficiently valid and compelling that they have led the way to a National Literacy Survey (NALS), begun in February of 1992, using the same array of tasks. Twelve states, including Pennsylvania (with the PALS), collected state samples at the same time to provide for statewide baseline data and comparison to national results. Educational Testing Service designed the instruments and also produced the TALS, which are now commercially available. These tests assess appropriate prose, document and quantitative literacy tasks for local programs and insure local results can be compared with regional and national statistics.

Typical ABE/GED programs begin with a standardized reading and math test, such as the ABLE or TABE. Scores, in grade equivalent format, are then used to drive instructional programs and measure growth. Instruction proceeds with emphasis on vocabulary and comprehension (reading); spelling, grammar, usage on essay production (writing); and number operations with whole numbers, fractions, decimals and percents (mathematics). Curriculum materials infrequently relate these skills to the tasks that adults perform routinely. Most instruction clings to the academic (school) format rather than the applied (real life) format.

In *Facilitating the Flow of Information Between the Business and Education Community* (a report for the U.S. Department of Labor), Jorie Philippi states: "Traditional academic reading can be categorized as 'reading to remember information,' while workplace applications primarily are those in which the worker uses readily available job print materials intermittently while performing a job task. The type of reading done on-the-job can be categorized as 'reading to do' and utilizes the reading process for locating information and for using higher level thinking strategies to problem solve. Occupational writing processes differ, too. They place less emphasis on academic criteria like grammar and spelling and focus more on skills in organizing clear, readable products; accurately summarizing events; and mastery of thinking skills which enable

analysis, elaboration, and extension of written ideas. Workplace applications of mathematical processes for calculating information and for problem solving also go beyond the traditional basics of number concepts and computation skill-drill; competent workers need math proficiency levels that enable them to use math concepts to reason and interpret data."

Adult basic education programs experience attrition at an alarming rate. Data from programs across the country show an average of 50% dropout in typical 100 hour programs. This project hypothesized that traditional ABE academic-oriented programs do not meet the needs of adults in their daily lives and they, therefore, leave in record numbers. In early 1990's Lehigh County Community College annually served more than 500 adults in basic skills programs, 95% of whom are under the age 45. With the exception of one workplace literacy program and one job-specific literacy training class, its curriculum follows the standard ABE formula. In both population served and curriculum, it is representative of Pennsylvania ABE program. Where a population is at the peak of its working years (and will continue to be so for some time), our programs should be better suited to rapid acquisition of the skills needed to be successful in living, and finding and keeping a job.

GOALS AND OBJECTIVES

The goal of this program, therefore, was to generate data which would support a change in focus for ABE/GED programs, from a traditional approach to an emphasis on applied literacy skills. The questions which directed the research effort were:

----Can the Tests of Applied Literacy Skills (TALS) be successfully used as the primary measurement device in ABE/GED programs?

- -Can the scores on the TALS be used to predict success on the GED? If so, what scores would indicate success?
- -How does pre/post growth on the TALS compare to pre/post test data on the ABLE?

----What is the literacy level of Lehigh County Community College GED Preparation attendees? How do they compare to Pennsylvania and national results?

----Does instruction which focuses on applied literacy skills work better than a traditional program in meeting national, local and personal goals?

- -Are student learning gains greater?
- -Do more students stay in the program longer?
- -Is their everyday attendance generally better?

TREATMENT

Although students in the experimental class received an alternate treatment, it departed slightly from the original plan.

Prior to commencement of instruction, experimental students only were given two sessions on study skills to assist them in targeting learning goals and styles, desired outcomes and methods for studying material.

Once instruction began with both groups, it was expected that the experimental group would spend 1-1/2 of its 12 hours per month in career readiness skills. A counselor/instructor did indeed meet with students during October, November and December. Feedback from the instructor and students, however, indicated that this time could be more profitably spent in regular classroom instruction.

Computer skills were specified in the original proposal as another instructional area. It was intended that students would learn word processing applications with computers in conjunction with their essay writing. It was also hoped that GED-specific software could afford additional practice. Lack of time made this a more limited effort. Moreover, lack of funds and confusion in the ordering process delayed the arrival of the GED software until late January. In fact, this software was only fully used upon completion of classes during the independent study GED lab.

Those selected as the main focus for the experimental group, applied literacy skills texts did not provide adequate initial teaching of the skills. They required that the student first be proficient in the skill in order to use it in its application form. This was especially true in mathematics. For example, one must first understand and be able to compute percents before one can determine a 30% discount on an item.

FINDINGS

Objectives 1.0

Using pre and post test data from approximately 75 - 100 students, the project will investigate the correlation between the ETS Tests of Applied Literacy Skills (TALS) and the GED Official Practice Test to establish what, if any, scores on the TALS are predictive of success on the GED.

Evaluation Procedures

The research department of the college was asked to perform a statistical analysis of the data. They used a regression model to determine if eighteen (18) student scores on the Tests of Applied Literacy Skills (TALS) - Prose and Quantitative - could be used to predict scores on the GED Practice Subtests - Literature and the Arts and Mathematics. The report, including the analyses performed, are included in Appendix A.

Results

Matching scores for both tests were available for eighteen students. The results of the regression analyses indicate that:

1. TALS Prose Literacy scores cannot be used to predict scores on the GED Practice Literature and the Arts subtests.

2. There is a moderate correlation between the TALS Quantitative Test and the GED Practice Mathematics subtest, but the former should not be considered a strong predictor.

3. The small sample size may not have been sufficient to be confident of results.

Objective 2.0

Using pretest data from the TALS, scores of approximately 75-100 students will be analyzed and compared to state and national proficiencies in applied literacy skills with conclusions drawn about Lehigh County adults.

Evaluation Procedures

Results from the national and state literacy studies were not available at this writing. Pretest scores on the ETS Document Test, Form A, were analyzed for 71 students from both classes. Percentages at ETS - designated Levels 1 through 5 were calculated as well as means. These figures were then compared to the results of the 1990 ETS Study completed for the U.S. Department of Labor (*Beyond the School Doors: The Literacy Needs of Job Seekers Served by the U.S. Department of Labor*).

Results

Figure 2.1 on the following page shows that more project students (98.6%) scored at Level 2 or above on the Document Literacy Test when compared with a national sample of JTPA (86%) and unemployment service applicants (87%).

Figure 2.2 shows average scores on Document, Prose and Quantitative Literacy Tests for GED candidates locally and nationally. Since ETS reports a standard deviation of seven (7) points when means are used, there are really no substantial differences in the project populations and DOL participants.

Considering the two comparisons, it would appear that more Lehigh County GED candidates have mastered practical literacy tasks than participants in the DOL study. They are also at equivalent levels to other GED candidates nationally.

FIGURE 2.1

Verifying Applied Literacy Skills (VALS) Project Tests of Applied Literacy Skills, Document Test Comparison of Project Participants and Dept. of Labor Study			
Document Literacy Scale Scores (0-500)	LCCC 1993 VALS Students	DOL Job Seekers 1990 Unemployed	JTPA
Level 1 (225 or less)	1.4%	13%	14%
Level 2 (226 - 275)	43.7%	30%	37%
Level 3 (276 - 325)	38.0%	36%	35%
Level 4 (326 - 375)	16.9%	19%	12%
Level 5 (376 or more)	0%	2%	1%

FIGURE 2.2

Verifying Applied Literacy Skills (VALS) Project Tests of Applied Literacy Skills Comparison of Project Students and Dept. of Labor Study Mean Scores				
TALS Test	LCCC 1993 VALS Participants		Total Pop. DOL Study	JTPA Particip Studying for GED
Document	(n=71)	284.93	274.3	270.5
Prose	(n=69)	292.61	284.2	274.6
Quantitative	(n=66)	281.82	280.6	273.1

Objective 3.0

Between pre and post testing, students in the experimental group receiving applied literacy instruction will demonstrate significantly greater performance when compared with a control group receiving a traditional program in two areas:

- retention - fewer students will drop out of the experimental program and/or the percent of attendance will be greater than the control group, as verified by attendance logs
- target students will show greater pre/post learning gains as measured by the TALS and the ABLE

Evaluation Procedures

For **retention** information, the project maintained attendance sheets with students signing in each nightly session. At the end of the program, the number of sessions attended per student was calculated and various percentages derived.

For **achievement** information, students were pre and post tested using the ABLE and TALS. The college's research office compared pre and post test scores, using a t-test on mean scores, to determine if there were statistically significant differences.

- in academic growth from pre to post for either group
- in the amount of growth achieved when comparing experimental to control

Data and analyses may be found in Appendix A.

Because of the drop-out rate in both programs, the project analyzed two additional types of information:

-how project drop out rates compared to another evening GED program at the college

-how dropout students compared to completers in terms of age and pretest scores (age as an indicator of maturity and pretest scores as an indicator of readiness for GED preparation classes)

Results

Figure 3.1 presents **attendance** data for the two classes. The experimental class had one less session than the control due to a severe snowstorm.

In reviewing the number/percent of students completing the program, there was no substantial difference between the experimental (41%) and control (40%) groups.

Data were also analyzed to ascertain frequency of attendance. In this case, the control group (43%) fared slightly better than the experimental group (41%) in the amount of students attending more than half of the sessions. Control group students also averaged approximately 1-1/2 more sessions than experimental (19.94 vs. 18.29).

In **academic or basic skills,** Figure 3.2 summarizes the analyses of students pre/post scores on the TALS and ABLE tests. Both groups showed significant pre/post gains indicating that learning had occurred. The experimental group's gain was more noteworthy in traditional basic skills (as measured by the ABLE) and the control group's gain more significant in applied literacy skills (as measured by the TALS). This is contrary to the project's hypothesis.

When compared to <u>each other</u>, the analysis of data showed that there was no significant difference in the gains

of the experimental and control groups on the ABLE or TALS or on their final scores on the GED Practice Test.

High **dropout rates** in GED programs are a concern nationwide. The project looked at how its students compared to others enrolled in a fee-based Lehigh County Community College GED class, with Figure 3.1 presenting the data. The comparison reveals that while more fee-based students (54%) than project students (42%) completed the program, the fee-based program was much shorter (24 versus 39 and 40 sessions). Perhaps a more valid comparison would be the percent of students completing half or more sessions: 29% in fee-based and 42% for project.

Figure 3.3 looks at **age and pretest scores** for dropouts and completers. With the exception of the Document Literacy Test, there were no glaring differences in the pretest means of dropouts and completers. There was, however, a startling difference in average age of program completers (39.24 years) when compared to those who did to finish the program (26.75 years). Sex may also be a factor since the number of women completing the program (14) was nearly triple that of men (5).

FIGURE 3.1

Verifying Applied Literacy Skills (VALS) Project Summary of Attendance Information			
Item	Project Students Exp.	Control	Comparison Class
Total No. of Class Sessions	39	40	24
Number of Students Enrolled	34	35	28
(Number) Percent of Students Completing Class	(14) 41%	(14) 40%	(15) 54%
(Number) Percent of Students Attending at least 50% of sessions at least 20 sessions	 (14) 41% (14) 41%	 (15) 43% (15) 43%	 (15) 54% (8) 29%
Average Number of Sessions Attended	18.29	19.94	12.68

FIGURE 3.2

Verifying Applied Literacy Skills (VALS) Project Summary of Statistical Analyses for Significant Differences on Standardized Tests		
Test	Comparison of Experimental and Control Group Gains	Comparison of Pre/Post Gains Within Group
Official GED Practice Test	No Difference	
ABLE Tests Reading Comprehension Number Operations	 No Difference No Difference	 Exp. Group Significant Exp. & Control Group Significant
Tests of Applied Literacy Skills Document Literacy Prose Literacy Quantitative Literacy	 No Difference No Difference No Difference	 None significant Exp. & Control Group Significant Control Group Significant

FIGURE 3.3

Verifying Applied Literacy Skills (VALS) Project Comparison of Dropout and Completer Indicators				
Pretest Mean Scores				
Tests	All Dropouts	Completers Total	Exp	Control
ABLE Reading Comprehension	8.8	8.81	8.78	8.81
Number Operations	7.23	7.26	7.14	6.84
TALS Document	281.02	293.64	295.00	291.00
Prose	291.27	295.45	300.00	289.00
Quantitative	285.68	286.82	294.00	277.00
Age Means				
	26.75	39.24	41.00	37.67

Objective 4.0

Immediately and two months following program completion the percentage of target students indicating success in meeting personal and work-related goals will significantly exceed that of control group as evidenced by a comparison of responses on a student survey.

Evaluation Procedures

Students were contacted by telephone using the follow-up Survey in Appendix C. All contacts were made three months following program completion, in June of 1993.

Results

Of the 70 students originally enrolled, 35 were reached by telephone. Of the 35 who could not be reached, 16 had either moved or phones were disconnected. Although the remaining 19 were contacted repeatedly, they did not answer.

Figure 4.1 presents figures for the Student Follow-up Survey. Question 2 is the critical one for this objective. In general, most of the students reached had definable career goals - the majority of which fell in the health fields. Slightly more of the control group (17) than experimental group (14) had specific career goals.

For students to make progress toward their career goal, it was assumed that the GED was an important factor. Therefore, three steps of progress were considered: readiness to take the test, completion of the test, and movement toward the next level (enrollment in training or college, hiring for a career position). The amount of

progress made by experimental and control groups in meeting personal goals was essentially the same. That is, 12 experimental and 11 control students had achieved at least one step toward reaching their goals.

FIGURE 4.1

Verifying Applied Literacy Skills (VALS) Project
Student Followup Survey

	Total	Experimental	Control
Number initially enrolled	70	34	36
Survey followup			
Number contacted	35	18	17
Number not contacted	35	17	18
1. What are you doing now?			
working	22	11	11
nothing	7	4	4
going to school	3	1	2
recovering from illness	1	1	
2. What is your career goal?			
medical/health career	14	5	9
business	7	2	5
trade/technical	4	2	2
public service	2	1	1
no goal	2	2	
stay in current career	2	2	
2a. Progress in meeting goal			
Step 1 - ready for GED	13	6	7
Step 2 - completed GED	9	4	5
Step 3 - moved to next level	2	2	
3. Why do you want a GED?			
qualify for better job	13	6	7
go on to higher education	23	13	10
serve as model for kids	3	3	
personal satisfaction	7	3	4
other	1	1	
4. When will you take the test?			
already did	11	4	7
ASAP	6	3	3
within 6 months	9	8	1
within 1 year	3	1	2
no specific date	4	1	3

5a. Reason for leaving class?				
working too many hours	7		3	4
child care	3		1	2
enroll in other training	2		2	
health problems	2		2	
class too difficult	2			2
personal problems	1		1	
transportation	1		1	
peer pressure/distraction		1	1	
met goals	1		1	
5b. Class evaluation				
too easy	5		5	
too hard	8		4	4
about right	13		4	9
no comment	1		1	
5c and 6. What changes needed?				
more instructional hours	8		3	5
more individualized & small groups to meet needs of different levels	8		8	
less emphasis on math	4		4	
more emphasis on math	4			4
more emphasis on other subj.	4		3	1
more detail/explanation	3		2	1
more books for home use	4		1	3
more teacher control/organiz.	2		2	
nothing	6		2	4
eliminate counseling	1		1	
7. What was good about class?				
instructor	18		5	13
prepared you for test	4		4	
social aspect	6		5	1
everything	4		2	2
location	1		1	
no cost	1		1	
improved self-esteem	1		1	

Other Data
Evaluation Procedures

Information regarding the materials and treatments offered the experimental and control groups was also collected in an effort to pinpoint areas of success and/or difficulty.

Findings

At the outset of the program there were insufficient numbers of the traditional GED books for all students. The college intended to use Steck-Vaughn GED texts which it had on hand and ordered additional books to total the number expected in the program. Unbeknownst to the college, Steck-Vaughn had revised the GED book and was only printing the new edition. Therefore, instructors were faced with the necessity of using two different texts until additional books could be delivered - about six weeks later. Even after these were received, they were shared by the two classes and there were insufficient books for students to take home for study.

Although the project design called for the experimental group to receive instruction which was much more applied, treatment (content, format) should have been more different than what took place in the project.

- -the experimental group received 2 sessions devoted to study skills prior to instruction
- -the experimental group received periodic counseling sessions (1x/month for 1'1/2 hours)
- -only the control group received instruction in Science and Social Studies
- -the experimental group used Simon & Schuster Applied Literacy Skills materials for extra practice and homework

Many students were frustrated by the differing skill levels of their classmates; the irritation being particularly exacerbated in the study of mathematics. Those students lacking math skills found the pace too fast. Those who only needed review became bored when an instructor spent extra time teaching and reteaching. While both classes had equally varied abilities, the frustration seemed more pronounced in the experimental class (Figure 4.1, question 6) where students commented on the need for greater individualization or small group instruction. A review of instructor and student comments shows that both found the 100 hours of instructional time too short.

Finally, to provide for adequate sample sizes, both classes began with more than 35 students. It was expected that the dropout rate would follow national averages at fifty percent. However, beginning a research project with this number of students did pose logistics and instructional difficulties for all staff.

CONCLUSIONS

The original intention of the project was to provide an alternative curriculum to the traditional ABE/GED program, with the expectation that it would be more meaningful and useful to adult students. It assumed a strong correlation between applied literacy skills and the skills measured by the GED. It hypothesized that student learning gains would be equal or better, retention rates would improve and personal goals would be better served. It also sought to collect and compare local literacy information to larger state and national samples.

One of the four objectives stated in the project was completely met: 1.0 to investigate the correlation between the TALS and the GED practice test. Regression analysis showed little to no correlation between the two measures.

Another objective was partially met: 2.0 to compare project students' literacy levels to national and state samples. Data from national and state literacy surveys were not yet available. The project, therefore, compared its students to the most recently available literacy studies - completed by the Department of Labor with unemployment and JTPA participants in 1990. LCCC's GED students average scores are comparable to the DOL study, although it appears that fewer local students score at the lowest levels.

Two objectives relating to student performance were not met: 3.0 greater retention rates and greater pre/post

learning gains; and 4.0 greater goal accomplishment. There were no major differences between the experimental and the control groups.

Ultimately, there was a faulty assumption in the project - more at the philosophical than practical level. It was that preparation for the GED is equivalent to preparation for the world of work. In fact, this is probably not the case. The GED, although revised in the last ten years to measure critical thinking skills, still focuses on the more academic approach to the use of basic skills. As a measure of high school competence, it is proper that it do so. At this point in time, there still appears to be a mismatch in formal schooling outcomes and on-the-job needs for basic skills. Until that is resolved, each program must locally determine what goals it seeks to reach for its students.

Readers are asked to be cautious of hard conclusions for several reasons: the variable of two different instructors confounding results and the very small sample size. In terms of the questions originally asked by the project, a number of tentative answers were reached.

Question 1: Can the TALS be successfully used as the primary measurement device in ABE/GED programs? Answer: The TALS cannot be used as the primary measurement if GED preparation is the intended outcome. If, however, the goal is job training, the TALS would be the instrument of choice.

Question 2: What is the literacy level of Lehigh County attendees? How do they compare nationally and locally? Answer: Based on the scores of 71 students, most of the college's GED students were at a literacy level which would qualify them for trade, technical and clerical work at the very least. They compare favorably to job seeking candidates in the DOL study. Since data from the national and state literacy surveys were not yet available, no comparisons could be made.

Question 3: Does instruction which focuses on applied literacy skills work better than a traditional program in meeting national, local and personal goals. Answer: Results from the project are not adequate to resolve this question. While learning gains occurred for both groups, neither performed significantly better than the other.

APPENDIX A

Data Summaries and Statistical Analyses

Lehigh County Community College Memorandum

To: Joan Lippiac

From: Robyn Dickinson Kiefer

Date: May 20, 1993

Subject: PDE Project "Verifying Adult Literacy Skills" Statistics - Part 2

Enclosed are the results of the second statistical analysis which you requested for the PDE literacy project. All analyses were conducted using a regression model to determine if student scores on the ETS subtests (Prose Literacy and Quantitative Literacy) could be used to predict their scores on the GED subtests (Literacy and the Arts and Mathematics).

ETS Prose Literacy and GED Literacy and Arts

The results of the regression analysis indicate that the ETS subtest scores *cannot* be used to predict the students scores on the GED subtest. Several components of the analysis suggest that this data does not exhibit a linear relationship which is required for creating a prediction equation (see attached). In this case, the small size of the sample (n=18) could be confounding these results.

ETS Quantitative Literacy and GED Mathematics

The results of this regression analysis indicate that the ETS subtest scores can be used to predict the students scores on the GED subtest. The prediction equation which was derived follows:

GED Mathematics Score = 22.08 + .096 x ETS Quantitative Literacy Score

Several components of the analysis indicate that this equation may be used with the following cautions. A moderate correlation ($r = .544$, $p = .02$) was found to exist between the predicted and observed values for the GED subtest scores. Using this equation based on the ETS Quantitative Literacy score will allow you to account for 30% of the variability found in the students GED Mathematics score. Thus, the ETS subtest scores should not be considered a strong predictor of the students scores on the GED subtest.

Lehigh County Community College Memorandum

To: Joan Lippiac

From: Robyn Dickinson Kiefer

Date: May 3, 1993

Subject: PDE Project "Verifying Adult Literacy Skills" Statistics

Enclosed are the results of the statistical analysis which you requested for the PDE literacy project. Overall comments: All analyses were conducted using the t-test to compare the mean scores of the control and experimental groups as well as the pre- and post-test scores within each group. When using the 't' statistic with samples of this size, results should be reported with caution as significant differences may not have been detected due to the small number of cases in the sample. An additional caution in this study, the control and experimental groups received instruction from different teachers; this should be considered a confounding variable when reporting the results.

GED Practice Test

No statistically significant differences were found between the experimental and control groups for the mean overall test score or in any of the mean subtest scores.

ABLE Test

Statistically significant differences were found in the comparison of pre- and post-test means for the following cases: the control group Mathematics Operations ($p = .005$), the experimental group Reading Comprehension ($p < .05$), and the experimental group Mathematics Operations ($p = .01$) tests. These pre- and post-test comparisons were analyzed using a paired samples t-test.

A comparison of the experimental and control group mean test scores was then conducted using the independent samples t-test. It was determined that, in terms of the ABLE test, both groups were similar prior to instruction in measures of reading comprehension and mathematics operations. Analysis of the post-test means yielded no significant differences between the experimental and control group on these measures.

ETS Test

Statistically significant differences were found in the comparison of pre- and post-test means for the following cases: the control group Prose Literacy ($p < .01$), the control group Quantitative Literacy ($p = .05$), and the experimental group Prose Literacy ($p = .05$). These pre- and post-test comparisons were analyzed using a paired samples t-test.

A comparison of the experimental and control group mean test scores was then conducted using the independent samples t-test. It was determined that, in terms of the ETS test, both groups were similar prior to instruction in measures of document literacy and prose literacy. Using the mean quantitative literacy subscores, the groups were found to be significantly different prior to instruction thus, no post-test comparison was conducted using this measure. Analysis of the post-test means yielded no significant differences between the experimental and control groups on the document literacy or prose literacy subtests.

LEHIGH COUNTY COMMUNITY COLLEGE
PDE PROJECT "VERIFYING ADULT LITERACY SKILLS"

Pre to Post ETS Gains,
October 1992 through February 1993

Student	DOCUMENT LITERACY Pre	Post	Gain	PROSE LITERACY Pre	Post	Gain	QUANTITATIVE LITERACY Pre	Post	Gain
Experimental Class - Jean Dyer, Instructor									
[redacted]	260	280	20	270	270	0	290	270	(-20)
	320	350	30	320	350	30	310	330	20
	310	290	(-20)	290	360	70	280	250	(-30)
	310	320	10	310	300	(-10)	280	290	10
	300	260	(-40)	280	250	(-30)	300	250	(-50)
	350	350	0	310	340	30	300	390	90
	260	300	0	270	360	90	290	250	(-40)
	280	280	0	290	290	0	280	290	10
	340	320	(-20)	310	330	20	300	320	20
	270	290	20	320	310	(-10)	290	300	10
	280	350	70	330	340	10	300	270	(-10)
	260	300	40	290	310	20	290	330	40
	300	300	10	310	340	30	310	320	10
Mean (N=13)	295	307	12	279	319	40	294	297	3
Control Class - Joseph Cortese, Instructor									
[redacted]	270	310	40	290	290	0	260	270	10
	300	290	(-10)	250	280	30	250	260	10
	270	340	70	300	310	10	280	280	0
	320	280	(-40)	310	370	60	300	360	60
	370	350	(-20)	320	350	30	300	350	50
	250	290	40	280	280	0	270	260	(-10)
	250	300	50	280	290	10	280	280	0
	290	290	0	300	350	50	270	320	50
	300	290	(-10)	270	290	20	280	290	10
Mean (N=9)	291	304	13	289	301	12	277	297	20

Compare pre + post + control/experimental groups

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LEHIGH COUNTY COMMUNITY COLLEGE
PDE PROJECT "VERIFYING ADULT LITERACY SKILLS"

GED Official Practice Test
February 1993

	Writing Skills	Social Studies	Science	Mathematics	and the Arts	Total	Average
Experimental Class - Jean Dyer, Instructor							
[redacted]	55	49	53	53	56	266	53.2
[redacted]	41	43	45	50	41	220	44.0
[redacted]	55	20	38	44	49	206	41.2
[redacted]	59	57	50	53	55	274	54.8
[redacted]	38	47	51	55	43	234	46.8
[redacted]	44	41	53	46	52	236	47.2
[redacted]	51	59	58	55	53	276	55.2
[redacted]	53	53	51	58	48	263	52.6
[redacted]	48	53	52	53	48	254	50.8
[redacted]	43	52	51	53	50	249	49.8
Mean (N=10)	48.7	47.4	50.2	52	49.5	247.8	49.56
Control Class - Joseph Cortese, Instructor							
[redacted]	33	48	42	44	42	209	41.8
[redacted]	46	49	53	45	41	234	46.8
[redacted]	46	48	50	50	47	241	48.2
[redacted]	51	68	60	66	55	300	60.0
[redacted]	40	61	60	61	60	290	58.0
[redacted]	38	46	43	36	43	206	41.2
[redacted]	45	47	45	51	52	239	47.8
[redacted]	46	42	42	44	45	214	42.8
Mean (N=8)	44.1	51.1	49.4	49.6	48.1	241.6	48.33

compare subtests + total

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MORE

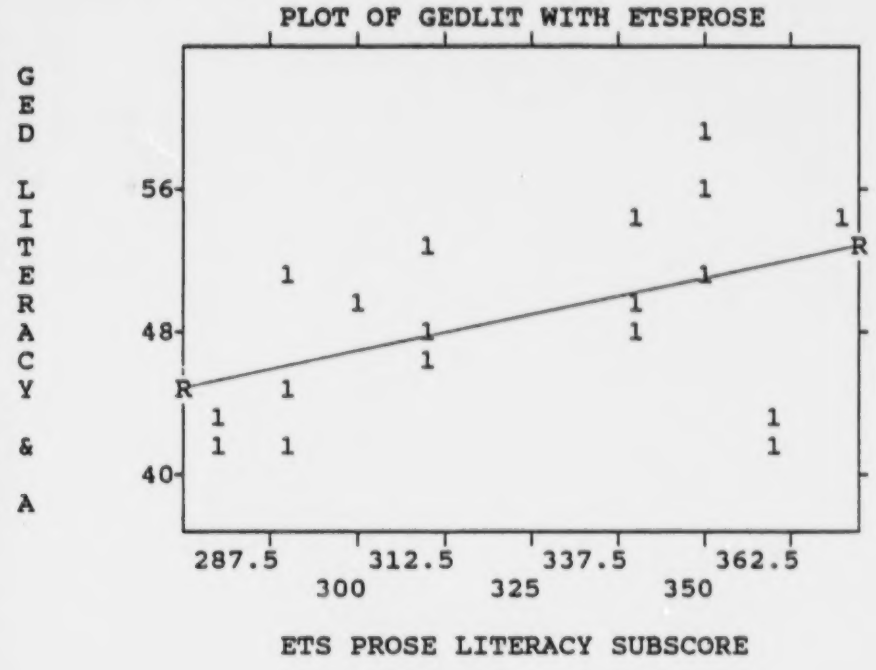
LNAME	FNAME	ETSPROSE	GEDLIT	ETSQUAN	GEDMATH
[redacted]		350	56	330	53
		360	41	250	50
		300	49	290	44
		340	55	390	53
		360	43	250	55
		290	52	290	46
		310	53	300	55
		340	48	270	58
		310	48	330	53
		340	50	320	53
		290	42	270	44
		280	41	260	45
		310	47	280	50
		370	55	360	66
		350	60	350	61
		280	43	260	36
		350	52	320	51
		290	45	290	44

Number of cases read = 18 Number of cases listed = 18

dep var = y axis
ind var = X axis

Literacy

MORE



MORE

18 cases plotted. Regression statistics of GEDLIT on ETSPROSE:
Correlation .43461 R Squared .18889 S.E. of Est 5.26966 Sig. .0715
Intercept(S.E.) 22.88750(13.52730) Slope(S.E.) .08042(.04166)

Equation

GED Lit Score = 22.89 + .08 (ETS Prose Lit Score)

Could use prediction equation
- linear relationship
not strong enough
???

MORE

*** * * * M U L T I P L E R E G R E S S I O N * * * ***

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. GEDLIT GED LITERACY & ARTS SUBSCO

Block Number 1. Method: Enter ETSPROSE

MORE

*** * * * M U L T I P L E R E G R E S S I O N * * * ***

Equation Number 1 Dependent Variable.. GEDLIT GED LITERACY & ARTS SUBSCO

Variable(s) Entered on Step Number
1.. ETSPROSE ETS PROSE LITERACY SUBSCORE

Multiple R	.43461 → correlation coefficient between predicted & observed values on this
R Square	.18889 → and tests explains 19% of variability in dep var
Adjusted R Square	.13820
Standard Error	5.26966

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	103.46944	103.46944
Residual	16	444.30833	27.76927

F = 3.72604 Signif F = .0715

↓
can not reject the null hypothesis that there is no linear relationship between the variables

MORE

*** * * * M U L T I P L E R E G R E S S I O N * * * ***

Equation Number 1 Dependent Variable.. GEDLIT GED LITERACY & ARTS SUBSCO

---------- Variables in the Equation ----------

Variable	B (slope)	SE B (standard errors)	95% Confdnce Intrvl B		Beta
ETSPROSE	.080417	.041660	-.007899	.168733	.434614
(Constant)	22.887500	13.527303	-5.789101	51.564101	

(constant = intercept)

(interval included zero — confidence that we can't reject the null hypothesis that the slope is zero at sig = .05 level)

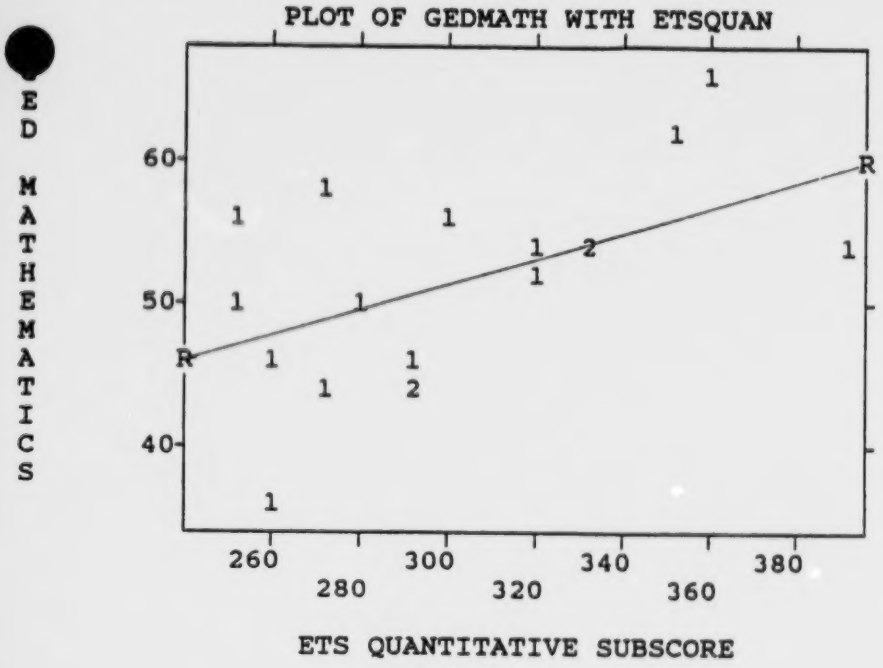
---------- in ----------

Variable	T (value for slope)	Sig T	
ETSPROSE	1.930	.0715	can't reject null hypothesis that the value of the slope is zero in the population (no linear relationship)
(Constant)	1.692	.1100	

End Block Number 1 All requested variables entered.

Math

MORE



MORE

18 cases plotted. Regression statistics of GEDMATH on ETSQUAN:
Correlation .54400 R Squared .29593 S.E. of Est 6.14078 Sig. .0196
Intercept(S.E.) 22.07921(11.22449) Slope(S.E.) .09604(.03703)

Equation

GED Math Score = 22.08 + .096 (ETS Quantitative Score)

To obtain predicted scores
one "plugged in" the equation
- the results are rounded!

MORE

*** * * * M U L T I P L E R E G R E S S I O N * * * ***

Listwise Deletion of Missing Data

Equation Number 1 Dependent Variable.. GEDMATH GED MATHEMATICS SUBSCORE

Block Number 1. Method: Enter ETSQUAN

MORE

*** * * * M U L T I P L E R E G R E S S I O N * * * ***

Equation Number 1 Dependent Variable.. GEDMATH GED MATHEMATICS SUBSCORE

Variable(s) Entered on Step Number
1.. ETSQUAN ETS QUANTITATIVE SUBSCORE

Multiple R	.54400 → correlation coefficient between predicted & observed values ... model
R Square	.29593
Adjusted R Square	.25193 → ind. var. explains 30% of variability in dep. var.
Standard Error	6.14078

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	1	253.59791	253.59791
Residual	16	603.34653	37.70916

F = 6.72510 Signif F = .0196

↳ can reject null hypothesis that there is no linear relationship between the two variables

MORE

*** * * * M U L T I P L E R E G R E S S I O N * * * ***

Equation Number 1 Dependent Variable.. GEDMATH GED MATHEMATICS SUBSCORE

---------- Variables in the Equation ----------

Variable	B	SE B	95% Confdnce Intrvl B		Beta
ETSQUAN	.096040	.037034	.017531	.174548	.543997
(Constant)	22.079208	11.224495	-1.715657	45.874073	

slope

intercept

interval does not include zero
- supports rejection of null hypothesis for slope

---------- in ----------

Variable	T	Sig T
ETSQUAN	2.593	.0196
(Constant)	1.967	.0668

value for slope

→ can reject null hypothesis that the value of the slope is zero in the population (a linear relationship exists)

End Block Number 1 All requested variables entered.

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LEHIGH COUNTY COMMUNITY COLLEGE
PDE PROJECT "VERIFYING ADULT LITERACY SKILLS"

GED Official Practice Test
February 1993

	Writing Skills	Social Studies	Science	Mathematics	and the Arts	Total	Average
Experimental Class - Jean Dyer, Instructor							
[redacted]	55	49	53	53	56	266	53.2
	41	43	45	50	41	220	44.0
	55	20	38	44	49	206	41.2
	59	57	50	53	55	274	54.8
	38	47	51	55	43	234	46.8
	44	41	53	46	52	236	47.2
	51	59	58	55	53	276	55.2
	53	53	51	58	48	263	52.6
	48	53	52	53	48	254	50.8
	43	52	51	53	50	249	49.8
Mean (N=10)	48.7	47.4	50.2	52	49.5	247.8	49.56
Control Class - Joseph Cortese, Instructor							
[redacted]	33	48	42	44	42	209	41.8
	46	49	53	45	41	234	46.8
	46	48	50	50	47	241	48.2
	51	68	60	66	55	300	60.0
	40	61	60	61	60	290	58.0
	38	46	43	36	43	206	41.2
	45	47	45	51	52	239	47.8
	46	42	42	44	45	214	42.8
Mean (N=8)	44.1	51.1	49.4	49.6	48.1	241.6	48.33

compare subtests + total

ED Test – Control Groups

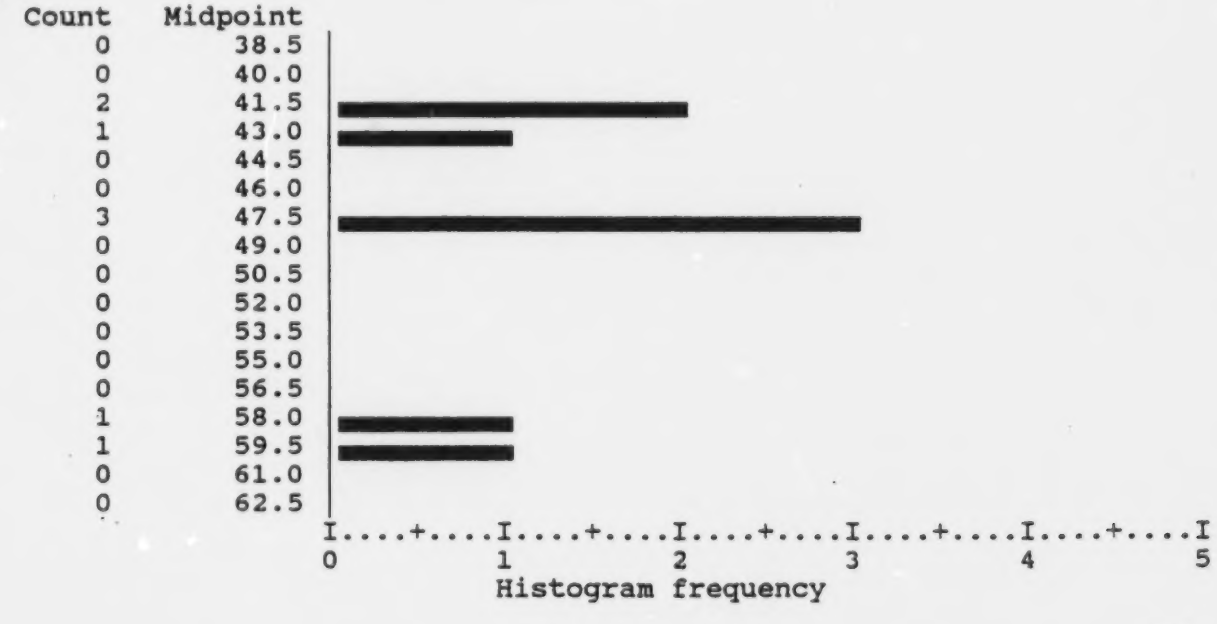
MORE

AVGSCORE TEST AVERAGE (INDIVIDUAL)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	41.2	1	12.5	12.5	12.5
	41.8	1	12.5	12.5	25.0
	42.8	1	12.5	12.5	37.5
	46.8	1	12.5	12.5	50.0
	47.8	1	12.5	12.5	62.5
	48.2	1	12.5	12.5	75.0
	58.0	1	12.5	12.5	87.5
	60.0	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

MORE

AVGSCORE TEST AVERAGE (INDIVIDUAL)



MORE

AVGSCORE TEST AVERAGE (INDIVIDUAL)

Mean	48.325	Median	47.300	Std dev	7.135
Variance	50.914	Range	18.800		

GED Test - Experimental Group

MORE

AVGSCORE TEST AVERAGE (INDIVIDUAL)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	41.2	1	10.0	10.0	10.0
	44.0	1	10.0	10.0	20.0
	46.8	1	10.0	10.0	30.0
	47.2	1	10.0	10.0	40.0
	49.8	1	10.0	10.0	50.0
	50.8	1	10.0	10.0	60.0
	52.6	1	10.0	10.0	70.0
	53.2	1	10.0	10.0	80.0
	54.8	1	10.0	10.0	90.0
	55.2	1	10.0	10.0	100.0
	Total	10	100.0	100.0	

MORE

AVGSCORE TEST AVERAGE (INDIVIDUAL)

MORE

AVGSCORE TEST AVERAGE (INDIVIDUAL)

Mean	49.560	Median	50.300	Std dev	4.683
Variance	21.927	Range	14.000		

GED Test;

MORE

Independent samples of GROUP GROUP (EXPERIMENTAL / CONTROL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: AVGSCORE TEST AVERAGE (INDIVIDUAL)

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	8	48.3250	7.135	2.523
Exp. Group 2	10	49.5600	4.683	1.481

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
2.32	.238	-.44	16	.664	-.42	11.58	.681

No sig. difference.

MORE

Independent samples of GROUP GROUP (EXPERIMENTAL / CONTROL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: WRITESKL WRITING SKILLS SUBSCORE

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	8	44.1250	5.793	2.048
Exp. Group 2	10	48.7000	6.977	2.206

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.45	.638	-1.49	16	.156	-1.52	15.96	.148

No sig. difference

MORE

Independent samples of GROUP GROUP (EXPERIMENTAL / CONTROL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: SOCSTUDY SOCIAL STUDIES SUBSCORE

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	8	51.1250	8.725	3.085
Exp. Group 2	10	47.4000	11.177	3.535

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.64	.526	.77	16	.452	.79	16.00	.439

No sig. difference

MORE

Independent samples of GROUP GROUP (EXPERIMENTAL / CONTROL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: SCIENCE SCIENCE SUBSCORE

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	8	49.3750	7.633	2.699
Exp. Group 2	10	50.2000	5.350	1.692

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
2.04	.317	-.27	16	.791	-.26	12.13	.800

No sig difference

MORE

Independent samples of GROUP GROUP (EXPERIMENTAL / CONTROL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: MATH MATHEMATICS SUBSCORE

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	8	49.6250	9.782	3.459
Exp. Group 2	10	52.0000	4.243	1.342

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
5.32	.024	-.69	16	.497	-.64	9.10	.538

No sig. difference

MORE

Independent samples of GROUP GROUP (EXPERIMENTAL / CONTROL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: ARTS ARTS SUBSCORE

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	8	48.1250	6.854	2.423
Exp. Group 2	10	49.5000	4.836	1.529

		Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
2.01	.326	-.50	16	.624	-.48	12.18	.640

No sig. difference

LEHIGH COUNTY COMMUNITY COLLEGE
PDE PROJECT "VERIFYING ADULT LITERACY SKILLS"

Pre to Post ABLE Gains
October 1992 through February 1993

Student	READING COOMPREHENSION Pre	Post	Gain	MATHEMATICS OPERATIONS Pre	Post	Gain
Experimental Class - Jean Dyer, Instructor						
[redacted]	13.0	13.0	0	7.2	13.0	5.8
	5.8	8.6	2.8	6.3	7.7	1.4
	9.1	13.0	3.9	7.5	8.1	.6
	9.5	13.0	3.5	7.5	13.0	5.5
	5.8	5.8	0	5.2	5.6	.4
	7.6	7.2	(-.4)	5.4	12.1	6.7
	13.0	13.0	0	12.1	13.0	.9
	7.6	11.4	3.8	12.1	13.0	.9
	8.2	8.2	0	5.9	6.1	.2
	8.2	13.0	4.8	7.2	13.0	5.8
Mean (N=10)	8.78	10.62	1.84	7.14	10.17	3.03
Control Class - Joseph Cortese, Instructor						
[redacted]	7.2	6.3	(-.9)	6.1	7.2	1.1
	6.1	6.1	0	6.1	7.5	1.4
	10.7	12.3	1.6	8.0	10.0	2.0
	13.0	13.0	0	6.6	9.3	2.7
	13.0	13.0	0	5.9	13.0	7.1
	5.5	6.1	.6	5.9	8.0	2.1
	6.6	5.3	(-1.3)	8.3	13.0	4.7
	12.3	11.4	(-.9)	7.7	11.5	3.8
	5.1	4.9	(-.2)	7.0	6.8	(-.2)
Mean (N=9)	8.81	8.71	(-.1)	6.84	9.59	2.75

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ABLE Test – Control Group

MORE

READ_PRE READING COMPREHENSION PRETEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	5.1	1	11.1	11.1	11.1
	5.5	1	11.1	11.1	22.2
	6.1	1	11.1	11.1	33.3
	6.6	1	11.1	11.1	44.4
	7.2	1	11.1	11.1	55.6
	10.7	1	11.1	11.1	66.7
	12.3	1	11.1	11.1	77.8
	13.0	2	22.2	22.2	100.0
	Total	9	100.0	100.0	

MORE

READ_PRE READING COMPREHENSION PRETEST

MORE

READ_PRE READING COMPREHENSION PRETEST

Mean	8.833	Median	7.200	Std dev	3.362
Variance	11.300	Range	7.900		

ABLE Test - Control Group

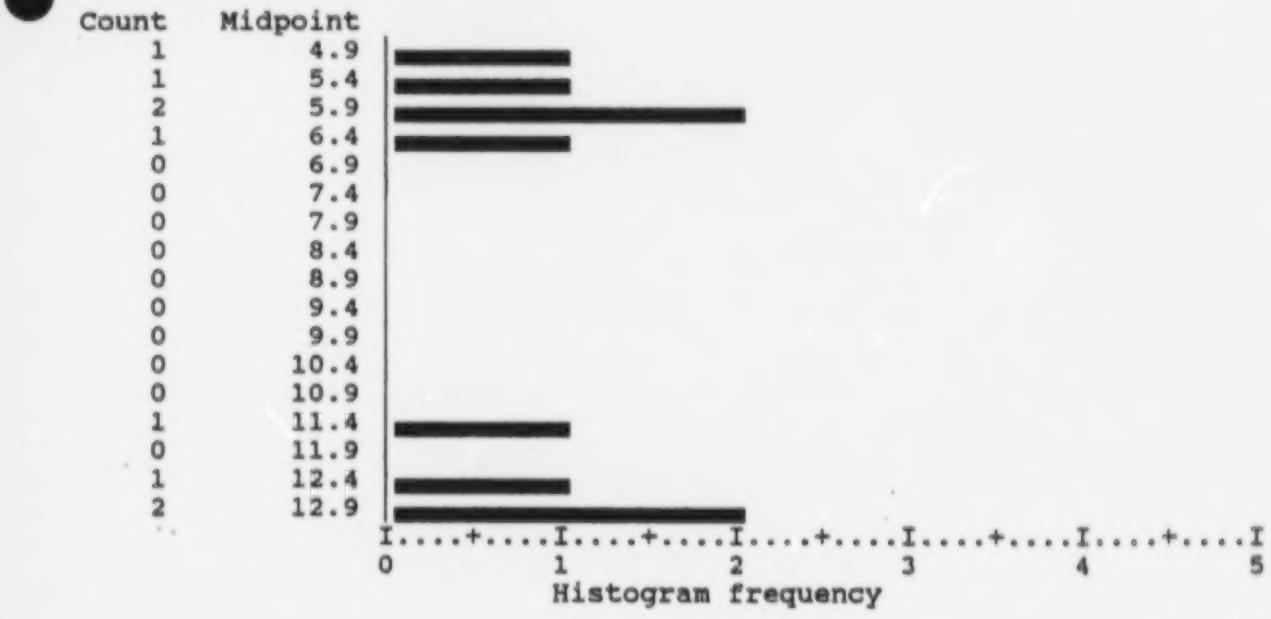
MORE

READ_PST READING COMPREHENSION POST TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	4.9	1	11.1	11.1	11.1
	5.3	1	11.1	11.1	22.2
	6.1	2	22.2	22.2	44.4
	6.3	1	11.1	11.1	55.6
	11.4	1	11.1	11.1	66.7
	12.3	1	11.1	11.1	77.8
	13.0	2	22.2	22.2	100.0
	Total	9	100.0	100.0	

MORE

READ_PST READING COMPREHENSION POST TEST



MORE

READ_PST READING COMPREHENSION POST TEST

Mean	8.711	Median	6.300	Std dev	3.580
Variance	12.814	Range	8.100		

ABLE Test - Control Group

MORE

MATH_PRE MATH OPERATIONS PRE-TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	5.9	2	22.2	22.2	22.2
	6.1	2	22.2	22.2	44.4
	6.6	1	11.1	11.1	55.6
	7.0	1	11.1	11.1	66.7
	7.7	1	11.1	11.1	77.8
	8.0	1	11.1	11.1	88.9
	8.3	1	11.1	11.1	100.0
	Total	9	100.0	100.0	

MORE

MATH_PRE MATH OPERATIONS PRE-TEST

MORE

MATH_PRE MATH OPERATIONS PRE-TEST

Mean	6.844	Median	6.600	Std dev	.946
Variance	.895	Range	2.400		

ABLE Test - Control Group

MORE

MATH_PST MATH OPERATIONS POST TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	6.8	1	11.1	11.1	11.1
	7.2	1	11.1	11.1	22.2
	7.5	1	11.1	11.1	33.3
	8.0	1	11.1	11.1	44.4
	9.3	1	11.1	11.1	55.6
	10.0	1	11.1	11.1	66.7
	11.5	1	11.1	11.1	77.8
	13.0	2	22.2	22.2	100.0
	Total	9	100.0	100.0	

MORE

MATH_PST MATH OPERATIONS POST TEST

MORE

MATH_PST MATH OPERATIONS POST TEST

Mean	9.589	Median	9.300	Std dev	2.438
Variance	5.944	Range	6.200		

ABLE Test - Exp. Group

MORE

READ_PRE READING COMPREHENSION PRETEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	5.8	2	20.0	20.0	20.0
	7.6	2	20.0	20.0	40.0
	8.2	2	20.0	20.0	60.0
	9.1	1	10.0	10.0	70.0
	9.5	1	10.0	10.0	80.0
	13.0	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

MORE

READ_PRE READING COMPREHENSION PRETEST

MORE

READ_PRE READING COMPREHENSION PRETEST

Mean	8.780	Median	8.200	Std dev	2.527
Variance	6.384	Range	7.200		

ABLE Test - Exp. Group

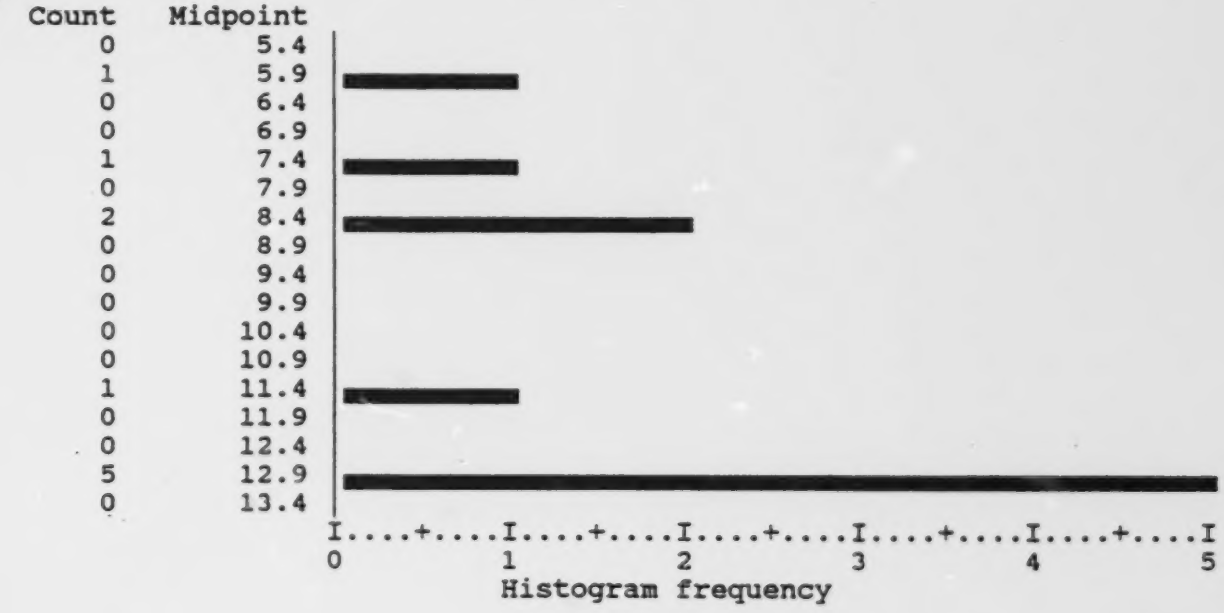
MORE

READ_PST READING COMPREHENSION POST TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	5.8	1	10.0	10.0	10.0
	7.2	1	10.0	10.0	20.0
	8.2	1	10.0	10.0	30.0
	8.6	1	10.0	10.0	40.0
	11.4	1	10.0	10.0	50.0
	13.0	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

MORE

READ_PST READING COMPREHENSION POST TEST



MORE

READ_PST READING COMPREHENSION POST TEST

Mean	10.620	Median	12.200	Std dev	2.863
Variance	8.200	Range	7.200		

ABLE Test - Exp. Group

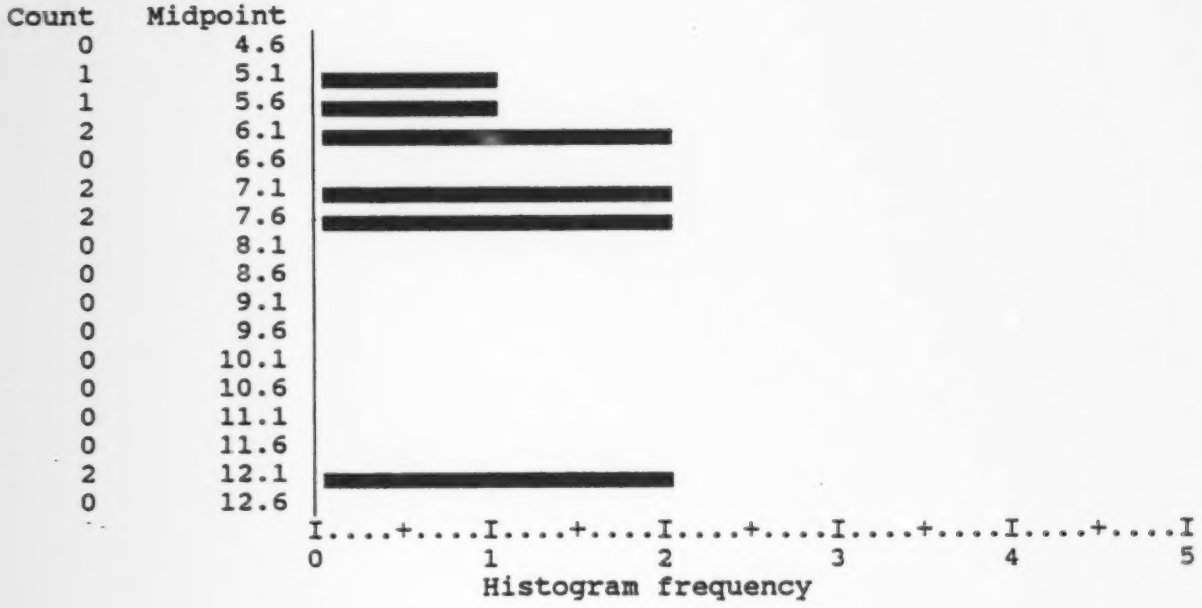
MORE

MATH_PRE MATH OPERATIONS PRE-TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	5.2	1	10.0	10.0	10.0
	5.4	1	10.0	10.0	20.0
	5.9	1	10.0	10.0	30.0
	6.3	1	10.0	10.0	40.0
	7.2	2	20.0	20.0	60.0
	7.5	2	20.0	20.0	80.0
	12.1	2	20.0	20.0	100.0
	Total	10	100.0	100.0	

MORE

MATH_PRE MATH OPERATIONS PRE-TEST



MORE

MATH_PRE MATH OPERATIONS PRE-TEST

Mean	7.640	Median	7.200	Std dev	2.495
Variance	6.223	Range	6.900		

ABLE Test - Exp. Groups

MORE

MATH_PST MATH OPERATIONS POST TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	5.6	1	10.0	10.0	10.0
	6.1	1	10.0	10.0	20.0
	7.7	1	10.0	10.0	30.0
	8.1	1	10.0	10.0	40.0
	12.1	1	10.0	10.0	50.0
	13.0	5	50.0	50.0	100.0
	Total	10	100.0	100.0	

MORE

MATH_PST MATH OPERATIONS POST TEST

MORE

MATH_PST MATH OPERATIONS POST TEST

Mean	10.460	Median	12.550	Std dev	3.176
Variance	10.085	Range	7.400		

ABLE Test – Control Group

MORE

Paired samples t-test: READ_PRE READING COMPREHENSION PRETEST
READ_PST READING COMPREHENSION POST TEST

Variable	Number of Cases	Mean	Standard Deviation	Standard Error
READ_PRE	9	8.8333	3.362	1.121
READ_PST	9	8.7111	3.580	1.193

(Difference) Mean	Standard Deviation	Standard Error	Corr.	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
.1222	.876	.292	.970	.000	.42	8	.686

Not sig. difference

MORE

Paired samples t-test: MATH_PRE MATH OPERATIONS PRE-TEST.
MATH_PST MATH OPERATIONS POST TEST

Variable	Number of Cases	Mean	Standard Deviation	Standard Error
MATH_PRE	9	6.8444	.946	.315
MATH_PST	9	9.5889	2.438	.813

(Difference) Mean	Standard Deviation	Standard Error	Corr.	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
-2.7444	2.181	.727	.451	.223	-3.77	8	.005

Sig. difference

ABLE Test - Exp. Group

MORE

Paired samples t-test: READ_PRE READING COMPREHENSION PRETEST
READ_PST READING COMPREHENSION POST TEST

Variable	Number of Cases	Mean	Standard Deviation	Standard Error
READ_PRE	10	8.7800	2.527	.799
READ_PST	10	10.6200	2.863	.906

(Difference) Mean	Standard Deviation	Standard Error	Corr.	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
-1.8400	2.084	.659	.708	.022	-2.79	9	.021

Sig. difference

MORE

Paired samples t-test: MATH_PRE MATH OPERATIONS PRE-TEST
MATH_PST MATH OPERATIONS POST TEST

Variable	Number of Cases	Mean	Standard Deviation	Standard Error
MATH_PRE	10	7.6400	2.495	.789
MATH_PST	10	10.4600	3.176	1.004

(Difference) Mean	Standard Deviation	Standard Error	Corr.	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
-2.8200	2.729	.863	.559	.093	-3.27	9	.010

Sig. difference

ABLE Test

MORE

Independent samples of GROUP GROUP (CONTROL / EXPERIMENTAL) .

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: READ_PRE READING COMPREHENSION PRETEST .

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	9	8.8333	3.362	1.121
Exp. Group 2	10	8.7800	2.527	.799

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.77	.412	.04	17	.969	.04	14.80	.970

not sig. difference

MORE

Independent samples of GROUP GROUP (CONTROL / EXPERIMENTAL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: READ_PST READING COMPREHENSION POST TEST

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	9	8.7111	3.580	1.193
Exp. Group 2	10	10.6200	2.863	.906

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.56	.519	-1.29	17	.214	-1.27	15.34	.221

not sig. difference

TABLE Test

MORE

Independent samples of GROUP GROUP (CONTROL / EXPERIMENTAL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: MATH_PRE MATH OPERATIONS PRE-TEST

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	9	6.8444	.946	.315
Exp Group 2	10	7.6400	2.495	.789

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
6.95	.012	-.90	17	.382	-.94	11.77	.368

Not sig difference

MORE

Independent samples of GROUP GROUP (CONTROL / EXPERIMENTAL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: MATH_PST MATH OPERATIONS POST TEST

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	9	9.5889	2.438	.813
Exp. Group 2	10	10.4600	3.176	1.004

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.70	.468	-.66	17	.515	-.67	16.63	.509

Not sig difference

ETS Test - Experimental Group

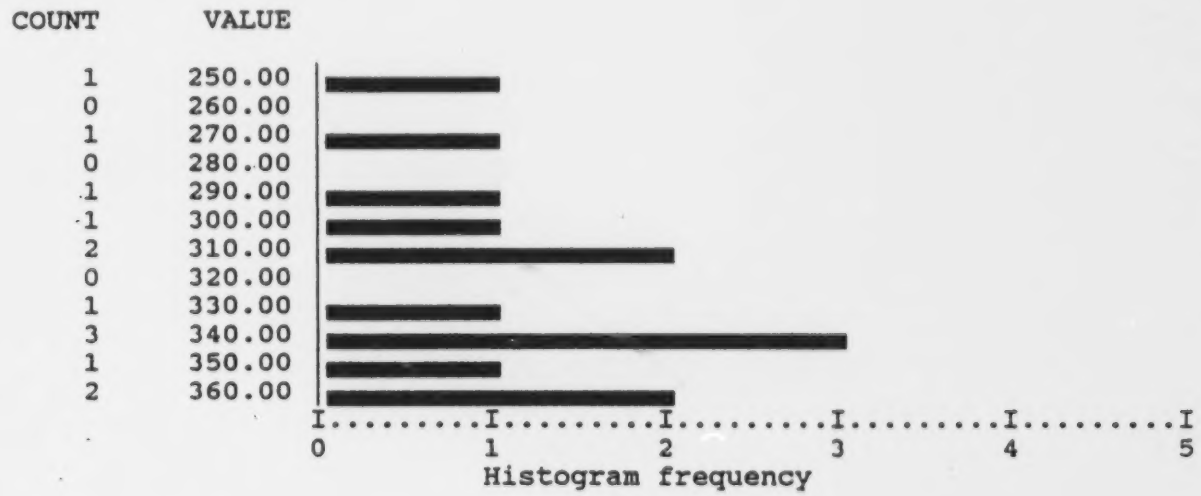
MORE

PROS_PST PROSE LITERACY POST TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	250	1	7.7	7.7	7.7
	270	1	7.7	7.7	15.4
	290	1	7.7	7.7	23.1
	300	1	7.7	7.7	30.8
	310	2	15.4	15.4	46.2
	330	1	7.7	7.7	53.8
	340	3	23.1	23.1	76.9
	350	1	7.7	7.7	84.6
	360	2	15.4	15.4	100.0
	Total	13	100.0	100.0	

MORE

PROS_PST PROSE LITERACY POST TEST



MORE

PROS_PST PROSE LITERACY POST TEST

Mean	319.231	Median	330.000	Std dev	34.511
Variance	1191.026	Range	110.000		

ETS Test - Experimental Group

MORE

QUAN_PRE QUANTITATIVE LITERACY PRE-TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	280	3	23.1	23.1	23.1
	290	4	30.8	30.8	53.8
	300	4	30.8	30.8	84.6
	310	2	15.4	15.4	100.0
	Total	13	100.0	100.0	

MORE

QUAN_PRE QUANTITATIVE LITERACY PRE-TEST

MORE

QUAN_PRE QUANTITATIVE LITERACY PRE-TEST

Mean	293.846	Median	290.000	Std dev	10.439
Variance	108.974	Range	30.000		

ETS Test - Experimental Group

MORE

QUAN_PST QUANTITATIVE LITERACY POST TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	250	3	23.1	23.1	23.1
	270	2	15.4	15.4	38.5
	290	2	15.4	15.4	53.8
	300	1	7.7	7.7	61.5
	320	2	15.4	15.4	76.9
	330	2	15.4	15.4	92.3
	390	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

MORE

QUAN_PST QUANTITATIVE LITERACY POST TEST

MORE

QUAN_PST QUANTITATIVE LITERACY POST TEST

Mean	296.923	Median	290.000	Std dev	40.903
Variance	1673.077	Range	140.000		

Control Group - ETS Test

MORE

Paired samples t-test: DOC_PRE DOCUMENT LITERACY PRE-TEST
DOC_POST DOCUMENT LITERACY POST TEST

Variable	Number of Cases	Mean	Standard Deviation	Standard Error
DOC_PRE	9	291.1111	37.896	12.632
DOC_POST	9	304.4444	24.552	8.184

(Difference) Mean	Standard Deviation	Standard Error	Corr.	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
-13.3333	37.417	12.472	.343	.366	-1.07	8	.316

No sig difference

MORE

Paired samples t-test: PROS_PRE PROSE LITERACY PRE-TEST
PROS_PST PROSE LITERACY POST TEST

Variable	Number of Cases	Mean	Standard Deviation	Standard Error
PROS_PRE	9	288.8889	21.473	7.158
PROS_PST	9	312.2222	34.921	11.640

(Difference) Mean	Standard Deviation	Standard Error	Corr.	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
-23.3333	21.213	7.071	.821	.007	-3.30	8	.011

sig. difference

Control Group - ETS test

MORE

Paired samples t-test: QUAN_PRE QUANTITATIVE LITERACY PRE-TEST
QUAN_PST QUANTITATIVE LITERACY POST TEST

Variable	Number of Cases	Mean	Standard Deviation	Standard Error
QUAN_PRE	9	276.6667	16.583	5.528
QUAN_PST	9	296.6667	37.749	12.583

(Difference) Mean	Standard Deviation	Standard Error	Corr.	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
-20.0000	25.981	8.660	.819	.007	-2.31	8	.050

Sig difference.

ETS Test – Experimental Group

MORE

Paired samples t-test: DOC_PRE DOCUMENT LITERACY PRE-TEST
DOC_POST DOCUMENT LITERACY POST TEST

Variable	Number of Cases	Mean	Standard Deviation	Standard Error
DOC_PRE	13	295.3846	30.170	8.368
DOC_POST	13	306.9231	29.264	8.117

(Difference) Mean	Standard Deviation	Standard Error	Corr.	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
-11.5385	29.678	8.231	.502	.081	-1.40	12	.186

No sig difference

MORE

Paired samples t-test: PROS_PRE PROSE LITERACY PRE-TEST
PROS_PST PROSE LITERACY POST TEST

Variable	Number of Cases	Mean	Standard Deviation	Standard Error
PROS_PRE	13	300.0000	19.579	5.430
PROS_PST	13	319.2308	34.511	9.572

(Difference) Mean	Standard Deviation	Standard Error	Corr.	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
-19.2308	32.777	9.091	.370	.213	-2.12	12	.056

sig difference.

BEST COPY AVAILABLE

Experimental Group – ETS Test

MORE

Paired samples t-test: QUAN_PRE QUANTITATIVE LITERACY PRE-TEST
QUAN_PST QUANTITATIVE LITERACY POST TEST

Variable	Number of Cases	Mean	Standard Deviation	Standard Error
QUAN_PRE	13	293.8462	10.439	2.895
QUAN_PST	13	296.9231	40.903	11.345

(Difference) Mean	Standard Deviation	Standard Error	Corr.	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
-3.0769	37.724	10.463	.420	.153	-.29	12	.774

No sig difference.

ETS Test

MORE

Independent samples of GROUP GROUP (CONTROL / EXPERIMENTAL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: DOC_PRE DOCUMENT LITERACY PRE-TEST

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	9	291.1111	37.896	12.632
Exp Group 2	13	295.3846	30.170	8.368

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.58	.459	-.29	20	.771	-.28	14.68	.782

No sig difference

MORE

Independent samples of GROUP GROUP (CONTROL / EXPERIMENTAL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: DOC_POST DOCUMENT LITERACY POST TEST

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	9	304.4444	24.552	8.184
Exp Group 2	13	306.9231	29.264	8.117

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.42	.632	-.21	20	.837	-.22	19.14	.832

2 groups similar with respect to pre-test: document lit. + prose lit. only!

No sig difference

ETS Test

MORE

Independent samples of GROUP GROUP (CONTROL / EXPERIMENTAL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: PROS_PRE PROSE LITERACY PRE-TEST

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	9	288.8889	21.473	7.158
Exp Group 2	13	300.0000	19.579	5.430

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.20	.746	-1.26	20	.223	-1.24	16.27	.234

No sig difference

MORE

Independent samples of GROUP GROUP (CONTROL / EXPERIMENTAL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: PROS_PST PROSE LITERACY POST TEST

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	9	312.2222	34.921	11.640
Exp Group 2	13	319.2308	34.511	9.572

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.02	.937	-.47	20	.646	-.47	17.23	.648

No sig difference

ETS Test

MORE

Independent samples of GROUP GROUP (CONTROL / EXPERIMENTAL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: QUAN_PRE QUANTITATIVE LITERACY PRE-TEST

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	9	276.6667	16.583	5.528
Exp. Group 2	13	293.8462	10.439	2.895

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
2.52	.144	-2.99	20	.007	-2.75	12.37	.017

Sig. difference!!

MORE

Independent samples of GROUP GROUP (CONTROL / EXPERIMENTAL)

Group 1: GROUP EQ 0 Group 2: GROUP EQ 1

t-test for: QUAN_PST QUANTITATIVE LITERACY POST TEST

	Number of Cases	Mean	Standard Deviation	Standard Error
Control Group 1	9	296.6667	37.749	12.583
Exp Group 2	13	296.9231	40.903	11.345

	Pooled Variance Estimate			Separate Variance Estimate		
F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.17	.844	-.01	20	.988	-.02	18.25	.988

LEHIGH COUNTY COMMUNITY COLLEGE
PDE PROJECT "VERIFYING ADULT LITERACY SKILLS"

Pre to Post ETS Gains
October 1992 through February 1993

Student	DOCUMENT LITERACY Pre	Post	Gain	PROSE LITERACY Pre	Post	Gain	QUANTITATIVE LITERACY Pre	Post	Gain
=1									
Experimental Class - Jean Dyer, Instructor									
[redacted]	260	280	20	270	270	0	290	270	(-20)
[redacted]	320	350	30	320	350	30	310	330	20
[redacted]	310	290	(-20)	290	360	70	280	250	(-30)
[redacted]	310	320	10	310	300	(-10)	280	290	10
[redacted]	300	260	(-40)	280	250	(-30)	300	250	(-50)
[redacted]	350	350	0	310	340	30	300	390	90
[redacted]	260	300	0	270	360	90	290	250	(-40)
[redacted]	280	280	0	290	290	0	280	290	10
[redacted]	340	320	(-20)	310	330	20	300	320	20
[redacted]	270	290	20	320	310	(-10)	290	300	10
[redacted]	280	350	70	330	340	10	300	270	(-10)
[redacted]	260	300	40	290	310	20	290	330	40
[redacted]	300	300	10	310	340	30	310	320	10
Mean (N=13)	295	307	12	~~279~~ 300	319	40	294	297	3
=0									
Control Class - Joseph Cortese, Instructor									
[redacted]	270	310	40	290	290	0	260	270	10
[redacted]	300	290	(-10)	250	280	30	250	260	10
[redacted]	270	340	70	300	310	10	280	280	0
[redacted]	320	280	(-40)	310	370	60	300	360	60
[redacted]	370	350	(-20)	320	350	30	300	350	50
[redacted]	250	290	40	280	280	0	270	260	(-10)
[redacted]	250	300	50	280	290	10	280	280	0
[redacted]	290	290	0	300	350	50	270	320	50
[redacted]	300	290	(-10)	270	290	20	280	290	10
Mean (N=9)	291	304	13	289	~~301~~ 312	12	277	297	20

compare pre + post + control/experimental groups

ETS Test- Control Group

MORE

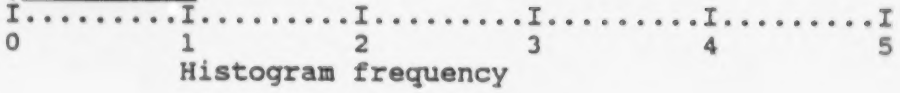
PROS_PRE PROSE LITERACY PRE-TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	250	1	11.1	11.1	11.1
	270	1	11.1	11.1	22.2
	280	2	22.2	22.2	44.4
	290	1	11.1	11.1	55.6
	300	2	22.2	22.2	77.8
	310	1	11.1	11.1	88.9
	320	1	11.1	11.1	100.0
	Total	9	100.0	100.0	

MORE

PROS_PRE PROSE LITERACY PRE-TEST

COUNT	VALUE
1	250.00
0	260.00
1	270.00
2	280.00
1	290.00
2	300.00
1	310.00
1	320.00



MORE

PROS_PRE PROSE LITERACY PRE-TEST

Mean	288.889	Median	290.000	Std dev	21.473
Variance	461.111	Range	70.000		

ETS Test - Control Group

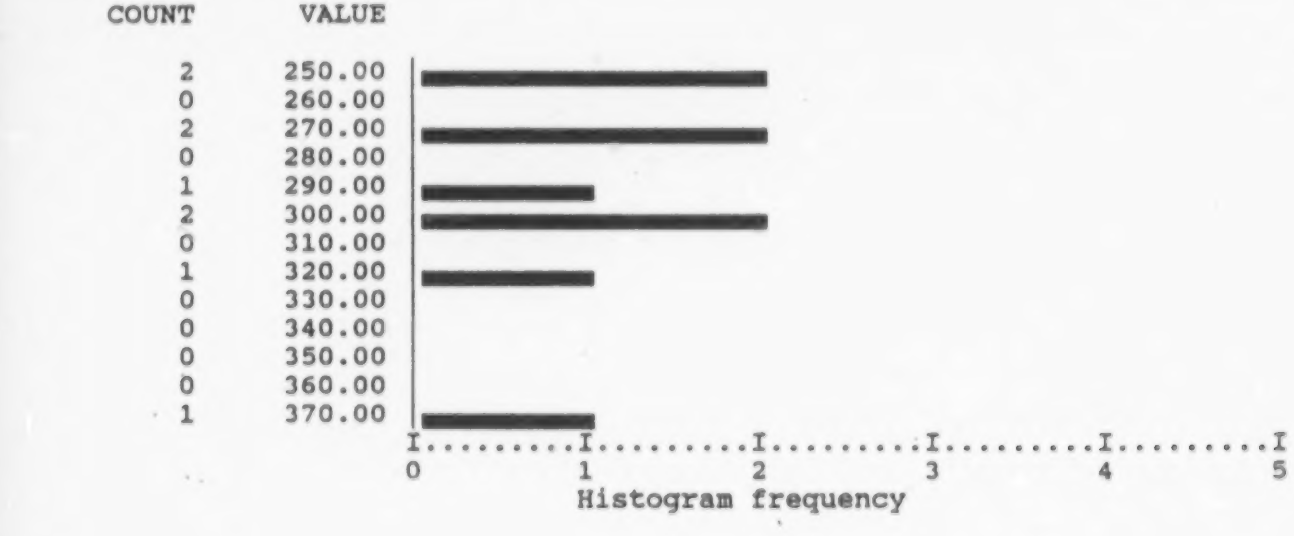
MORE

DOC_PRE DOCUMENT LITERACY PRE-TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	250	2	22.2	22.2	22.2
	270	2	22.2	22.2	44.4
	290	1	11.1	11.1	55.6
	300	2	22.2	22.2	77.8
	320	1	11.1	11.1	88.9
	370	1	11.1	11.1	100.0
	Total	9	100.0	100.0	

MORE

DOC_PRE DOCUMENT LITERACY PRE-TEST



MORE

DOC_PRE DOCUMENT LITERACY PRE-TEST

Mean	291.111	Median	290.000	Std dev	37.896
Variance	1436.111	Range	120.000		

ETS Test- Control Group

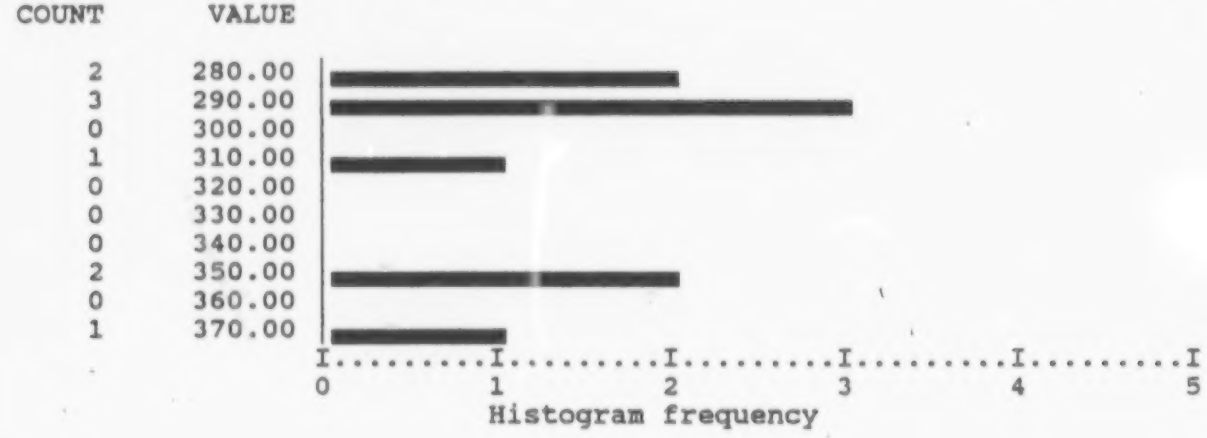
MORE

PROS_PST PROSE LITERACY POST TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	280	2	22.2	22.2	22.2
	290	3	33.3	33.3	55.6
	310	1	11.1	11.1	66.7
	350	2	22.2	22.2	88.9
	370	1	11.1	11.1	100.0
	Total	9	100.0	100.0	

MORE

PROS_PST PROSE LITERACY POST TEST



MORE

PROS_PST PROSE LITERACY POST TEST

Mean	312.222	Median	290.000	Std dev	34.921
Variance	1219.444	Range	90.000		

ETS - Control Group

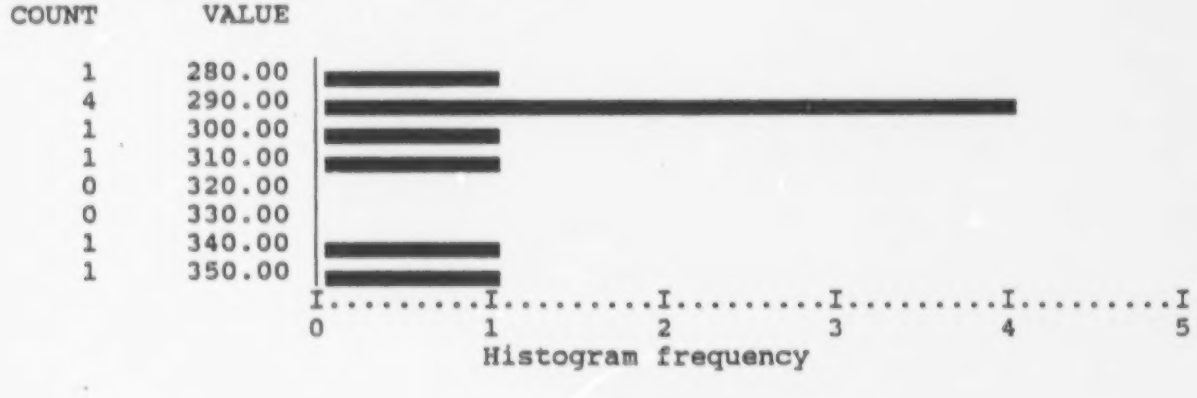
MORE

DOC_POST DOCUMENT LITERACY POST TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	280	1	11.1	11.1	11.1
	290	4	44.4	44.4	55.6
	300	1	11.1	11.1	66.7
	310	1	11.1	11.1	77.8
	340	1	11.1	11.1	88.9
	350	1	11.1	11.1	100.0
	Total	9	100.0	100.0	

MORE

DOC_POST DOCUMENT LITERACY POST TEST



MORE

DOC_POST DOCUMENT LITERACY POST TEST

Mean	304.444	Median	290.000	Std dev	24.552
Variance	602.778	Range	70.000		

ETS Test - Control Group

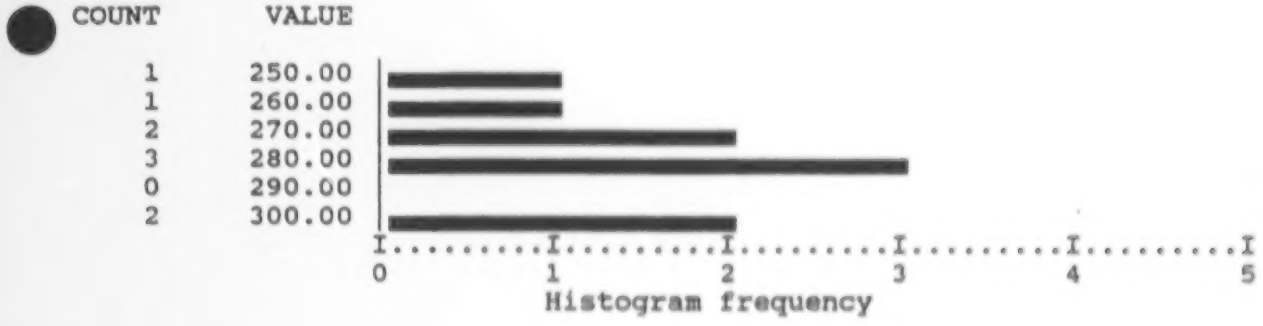
MORE

QUAN_PRE QUANTITATIVE LITERACY PRE-TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	250	1	11.1	11.1	11.1
	260	1	11.1	11.1	22.2
	270	2	22.2	22.2	44.4
	280	3	33.3	33.3	77.8
	300	2	22.2	22.2	100.0
	Total	9	100.0	100.0	

MORE

QUAN_PRE QUANTITATIVE LITERACY PRE-TEST



MORE

QUAN_PRE QUANTITATIVE LITERACY PRE-TEST

Mean	276.667	Median	280.000	Std dev	16.583
Variance	275.000	Range	50.000		

ETS - Control Group

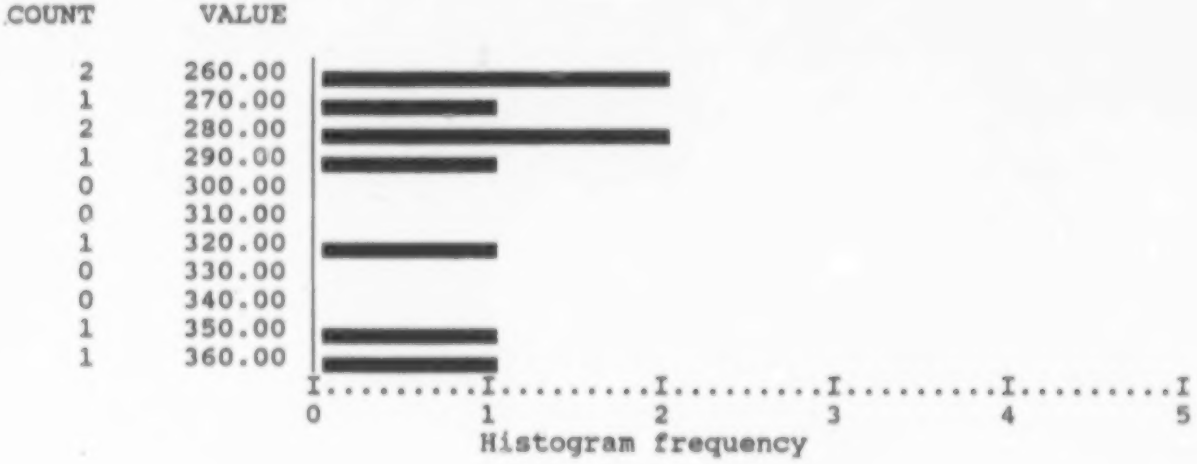
MORE

QUAN_PST QUANTITATIVE LITERACY POST TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	260	2	22.2	22.2	22.2
	270	1	11.1	11.1	33.3
	280	2	22.2	22.2	55.6
	290	1	11.1	11.1	66.7
	320	1	11.1	11.1	77.8
	350	1	11.1	11.1	88.9
	360	1	11.1	11.1	100.0
	Total	9	100.0	100.0	

MORE

QUAN_PST QUANTITATIVE LITERACY POST TEST



MORE

QUAN_PST QUANTITATIVE LITERACY POST TEST

Mean	296.667	Median	280.000	Std dev	37.749
Variance	1425.000	Range	100.000		

ETS Test - Experimental Group

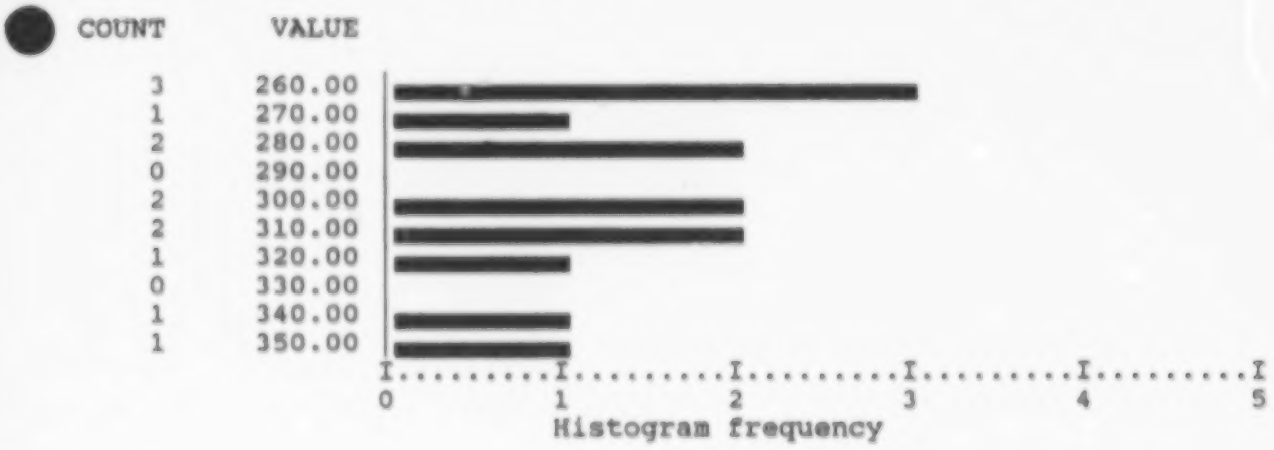
MORE

DOC_PRE DOCUMENT LITERACY PRE-TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	260	3	23.1	23.1	23.1
	270	1	7.7	7.7	30.8
	280	2	15.4	15.4	46.2
	300	2	15.4	15.4	61.5
	310	2	15.4	15.4	76.9
	320	1	7.7	7.7	84.6
	340	1	7.7	7.7	92.3
	350	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

MORE

DOC_PRE DOCUMENT LITERACY PRE-TEST



MORE

DOC_PRE DOCUMENT LITERACY PRE-TEST

Mean	295.385	Median	300.000	Std dev	30.170
Variance	910.256	Range	90.000		

ETS Test - Experimental Group

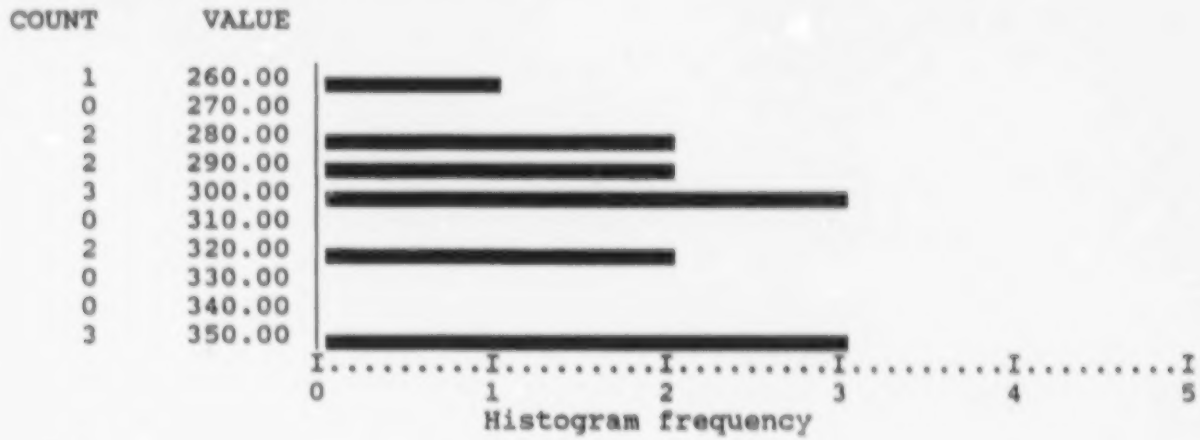
MORE

DOC_POST DOCUMENT LITERACY POST TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	260	1	7.7	7.7	7.7
	280	2	15.4	15.4	23.1
	290	2	15.4	15.4	38.5
	300	3	23.1	23.1	61.5
	320	2	15.4	15.4	76.9
	350	3	23.1	23.1	100.0
	Total	13	100.0	100.0	

MORE

DOC_POST DOCUMENT LITERACY POST TEST



MORE

DOC_POST DOCUMENT LITERACY POST TEST

Mean	306.923	Median	300.000	Std dev	29.264
Variance	856.410	Range	90.000		

ETS Test - Experimental Group

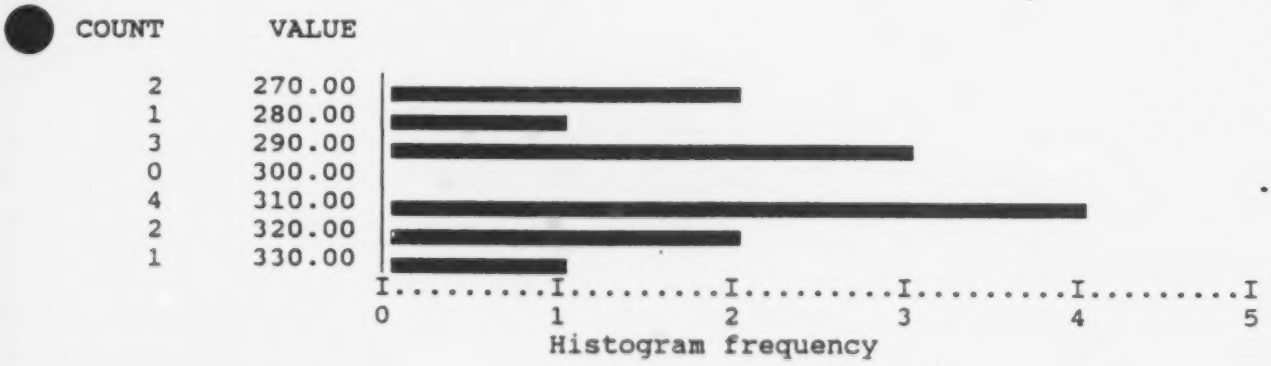
MORE

PROS_PRE PROSE LITERACY PRE-TEST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	270	2	15.4	15.4	15.4
	280	1	7.7	7.7	23.1
	290	3	23.1	23.1	46.2
	310	4	30.8	30.8	76.9
	320	2	15.4	15.4	92.3
	330	1	7.7	7.7	100.0
	Total	13	100.0	100.0	

MORE

PROS_PRE PROSE LITERACY PRE-TEST



MORE

PROS_PRE PROSE LITERACY PRE-TEST

Mean	300.000	Median	310.000	Std dev	19.579
Variance	383.333	Range	60.000		

APPENDIX B

Curriculum and Materials Outline

LEHIGH COUNTY COMMUNITY COLLEGE

Verifying Adult Literacy Skills (VALS)

Experimental Group Curriculum Overview

Curriculum Outline

I. Introduction to Course
   A. Education Testing Service Applied Skills Series
      1. Document Skills
      2. Reading Skills
      3. Numbers Skills
   B. Steck-Vaughn GED Literature and the Arts
      1. Steck-Vaughn Mathematics
      2. Steck-Vaughn Exercise Book - mathematics
      3. Cambridge Writing Skills Test
         a. Part 1 Conventions of English
         b. Part 2 The Essay

II. Writing Skills
   A. Sentence structure
   B. Usage
   C. Mechanics
   D. Editing paragraphs
   E. Practice test
   F. The writing process
   G. Text Cambridge GED Writing

III. Literature and the Arts
   A. Popular literature
   B. Classical literature
   C. Commentary on the arts
   D. Articles from newspapers
   E. Writing skills from E.T.S. books
   F. Text Steck-Vaughn Literature and the Arts
   G. E.T.S. reading skills

IV. Mathematics
   A. Whole numbers
   B. Fractions
   C. Decimals
   D. Percents
   E. Graphs
   F. Ratio/Proportion
   G. Mean/Median
   H. Measurement
   I. Geometry
   J. Algebra

K. E.T.S. Numbers and Document Skills integrated to fit in with number skills being taught
   1. E.T.S. Number Skills
      a. Whole numbers - addition, subtraction, multiplication, and division
      b. Decimals
      c. Percents
   2. E.T.S. document skills
      a. Lists, charts, graphs, maps, forms, advertisements

L. Texts
   1. Steck-Vaughn Mathematics
   2. Steck-Vaughn Exercise Book - mathematics

V. Practice GED Tests

Recommendations and Comments

A. E.T.S. books gave practical application for skills and problem solving

B. Insufficient numbers of hours for course work.

LEHIGH COUNTY COMMUNITY COLLEGE

Verifying Adult Literacy Skills (VALS)

Control Group Curriculum Overv ew

Curriculum Outline

I. Introduction
   A. Interview sheet
   B. Sample reading comprehension test
   C. Predictor test (Steck-Vaughn GED Review Book)
      1. Literature and the Arts
      2. Mathematics
      3. Science
      4. Social Studies
      5. Writing Skills
   D. Evaluation of Scores

II. Social Studies
   A. Vocabulary
   B. Geography
   C. History
   D. Economics
   E. Political Science
   F. Behavic al Science
   G. Consumer Reports: Advertising
   H. Consumer Reports: Today's Food
   I. One full-length practice test
   J. Texts
      1. Steck-Vaughn Complete GED Preparation
      2. Steck-Vaughn GED Exercise Book: Social Studies by Virginia A. Lowe
   K. Homework
      1. Consumer Reports
      2. Practice exercises in test

III. Science
   A. Vocabulary
   B. Biology
   C. Earth Science
   D. Chemistry
   E. Physics
   F. One full-length practice test
   G. Texts
      1. Steck-Vaughn Complete GED Preparation
      2. Steck-Vaughn Exercise Book: Science by Rose Marie Biddler

IV. Literature and the Arts
- A. Popular Literature
- B. Classical Literature
- C. Commentary on the Arts
- D. One full-length practice test
- E. Text
  1. Steck-Vaughn Complete GED Preparation
  2. Steck-Vaughn Exercise Book: Literature and the Arts by Virginia A. Lowe

V. Writing Skills
- A. Writing Assignment to open each class, to be returned and discussed at next session
- B. Sentence Structure
- C. Usage
- D. Mechanics
- E. The Writing Process
- F. Essay Writing
- G. One full-length practice test
- H. Text
  1. Steck-Vaughn Complete GED Preparation
  2. Steck-Vaughn Exercise Book: Writing Skills
     a. Part 1: Conventions of English by Donna A. Amatutz
     b. Part 2: The Essay by Cheryl Moore Johnson

VI. Mathematics
- A. Whole Numbers
- B. Fractions
- C. Decimals
- D. Percents
- E. Graphs and Tables
- F. Ratio, Proportion, Mean, Median, Probability
- G. Measurement
- H. Algebra
- I. Geometry
- J. Texts
  1. Steck-Vaughn Complete GED Preparation
  2. Steck-Vaughn Exercise Book: Mathematics by Dorothy McMurtry
  3. The Cambridge Program for the Mathematics Test by Jerry Howett

VII. E.T.S. Testing

VIII. ABLE Testing

IX. GED Practice Testing

APPENDIX C

Student Follow-up Survey

LEHIGH COUNTY COMMUNITY COLLEGE
PDE PROJECT "VERIFYING ADULT LITERACY SKILLS"
1992-93

Student Follow-up Survey

Student Name_____Interviewer_____

Sex_____Age_____No. of School Years Completed_____

1. What are you doing now?

2. What is your career goal?

3. Why did you want to get a GED? Do you still want to?

4. When do you hope to take the test? Are you presently doing anything to prepare for it?

5. What caused you to leave the class? Was the class too difficult? too easy? just about right? Was there anything about the class that didn't or did meet your needs?

6. Is there anything you might like to see changed about the class?

7. What was good about the class?

8. Is there anything we can do to help you?